

The exotic Flora of Ranchi¹

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(With a map)

Ranchi, the summer capital of Bihar, has a rich exotic flora which forms a dominant part of the landscape. The study covers 209 exotic species and varieties of gymnosperms and angiosperms that are cultivated or naturalized in the district. An attempt has been made to determine the country of origin of the exotics, aliens and neophytes of Ranchi which were studied both in the field and in the laboratory during the years 1957-1959, 1964-1967 and 1970. The study reveals that exotic plants were introduced in this region both adventitiously and intentionally for purposes of food and fodder, forage, medicine, ornament, afforestation, green manuring and soil conservation. In addition, a large number of exotic weeds have also been introduced in the district, either intentionally as ornamental plants or accidentally with food grains, ballast, packing materials and seeds of economic plants.

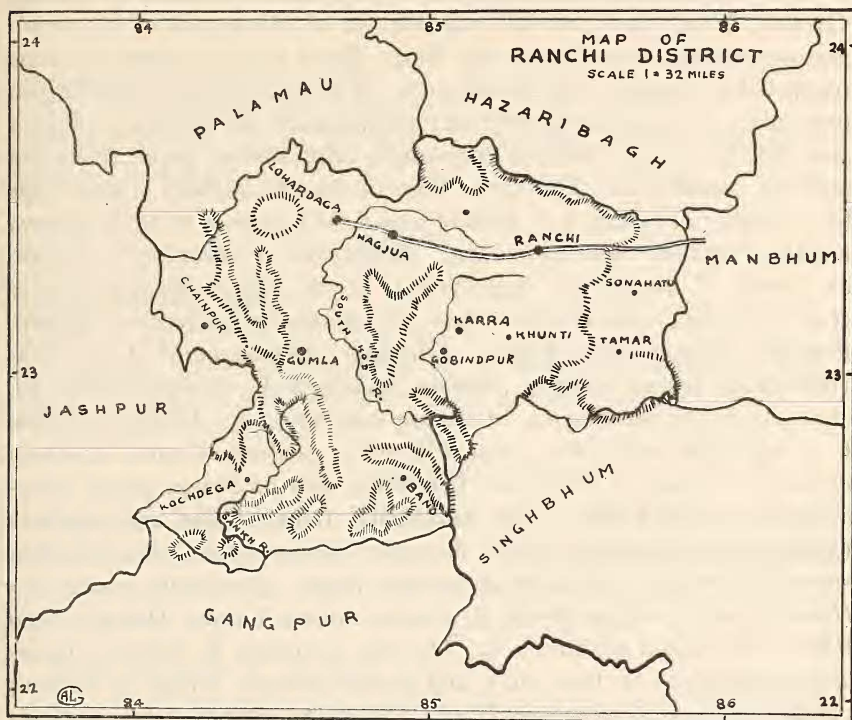
INTRODUCTION

Ranchi (23°22' N, 85°22' E), the summer capital of Bihar, is situated on a picturesque undulating plateau at an altitude of 655 m above sea level. It forms a distinct physical unit of Bihar (*see also map*). The Damodar river forms the northern boundary of the district. The Subarnarekha river originates near Piska and passes through Ranchi city. The Koel, Sankh, Kanchi and Kharkai are other important rivers which flow through the district. The Subarnarekha river forms the most attractive waterfall in Bihar at Hundru, situated at a distance of 35 km east of Ranchi with a drop of over 80 m. There are also noteworthy waterfalls like Dassam, Sadni, Johna and Sita. The climate is of the tropical monsoon type with an annual average rainfall of 1476 mm. The maximum temperature reaching to 40°C has been recorded in the month of May. The minimum temperature of 7°C has been recorded in the month of December. The relative humidity is higher during the months from June to August, being maximum in the months

¹ Accepted April 1, 1971.

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of July and August (88%) and minimum in the month of April (39%). The soils are of various types, i.e. sandy-loam, gravel, red-ferruginous, alluvial and even black sticky clay.



Map showing geographic location of the study area of Ranchi District, Bihar.

Ranchi is a famous hill station of the region. In the later part of the 19th century, it became the summer headquarters of the British. During this period, a number of exotic plants were introduced for beautifying the landscape. We made a systematic study of the exotics, aliens and neophytes of Ranchi during the years 1957-1959, 1964-1967 and 1970. The exotic flora of Ranchi forms today a dominant part of its gardens, parks and landscape. However, the existing floras are inadequate for the identification of exotic plants. The present study, therefore, covers 209 exotic species and varieties of gymnosperms and angiosperms that are cultivated or naturalized in the district. The data on the country of origin and probable time of their introduction into India are determined. It may be mentioned that the time of introduction of species is in many cases difficult to determine, as exact records of their introduction are lacking. Much of the information on the early history of plant introduction is scattered in the old travel records of several visitors and dignitaries to India and in the classical works of

Moghul emperors, Missionary botanists and the European officials and explorers, especially the Portuguese, Dutch, Spaniards, French and the British.

The earliest collection of plants in this area was made by Clarke, Gamble, Wood, Ball and Rev. Cardon. In his discussion of the immigration of plants into Bengal and Bihar, Bruhl (1908) mentioned some plants from Ranchi. The introduction of exotic plants in this region took place both adventitiously and intentionally for purposes of food and fodder, forage, medicine, ornament, afforestation, green manuring and soil conservation. The exotic flora of Ranchi includes useful crops like cereals (*Zea mays* L.), pasture and fodder grasses (*Chloris gayana* Kunth, *Panicum maximum* Jacq., *Pennisetum clandestinum* Hochst. ex Chiov., *P. purpureum* Schumach.), green manure or cover crops (*Calopogonium mucunoides* Desv., *Centrosema pubescens* Benth., *Pueraria phaseoloides* Benth., *Trifolium alexandrinum* L.), fruits (*Manilkara achras* Fosberg, *Annona squamosa* L., *Carica papaya* L., *Anacardium occidentale* L., *Averrhoa carambola* L., *Psidium guajava* L.), vegetables and tuber crops (*Manihot esculenta* Crantz, *Ipomoea batatas* L., *Solanum tuberosum* L.), drugs and medicinal plants (*Erythroxylum coca* Lamk.), and ornamental trees, shrubs and climbers (*Schizolobium excelsum* Vog., *Samanea saman* Merr., *Bougainvillea spectabilis* Willd., *Callistemon citrinus* Stapf, *Quisqualis indica* L., *Hibiscus schizopetalus* Hook. f., *Cassia siamea* Lamk., *Delonix regia* Rafin., *Allamanda cathartica* L., *Thevetia peruviana* K. Schum., *Jacaranda mimosifolia* D. Don, etc.), and garden annuals, foliage or bulbous plants (*Araucaria columnaris* Hook., *Cupressus sempervirens* L., *Thuja orientalis* L., *Portulaca grandiflora* Hook., *Dahlia pinnata* Cav., *Antirrhinum majus* L., *Amaryllis belladonna* L., *Haemanthus coccineus* L., *Gladiolus gandavensis* Van Houtte). A large number of exotic weeds have also been introduced in the district, either intentionally as ornamental plants or accidentally with food grains, ballast, packing materials and seeds of economic plants. These include noxious weeds and pests like *Argemone mexicana* L., *A. ochroleuca* Sweet, *Gomphrena celosioides* Mart., *Opuntia dillenii* Haw., *Croton bonplandianum* Baill., *Acanthospermum hispidum* DC., *Eichhornia crassipes* Solms, *Ipomoea fistulosa* Mart. ex Choisy, *Convolvulus arvensis* L., *Martynia annua* L., and *Hyptis suaveolens* Poit.

ENUMERATION OF SPECIES

1. CYCADACEAE

1. **Cycas revoluta** Thunb. Sago Cycas
Native of China and Japan (MacMillan 1952). Introduced in Indian

Botanic Garden, Sibpur near Calcutta in 1794 (Voigt 1845). Frequently grown in private and public gardens for its ornamental foliage.

2. ARAUCARIACEAE

2. *Araucaria columnaris* Hook.

Syn. *A. cookii* R. Br. Columnar Araucaria.

Native of New Caledonia (Bailey 1949). Planted in gardens for its ornamental foliage.

3. PINACEAE

3. *Pinus roxburghii* Sarg.

Syn. *P. longifolia* Roxb. Chirpine

Native in the Outer Himalayas and extends from Bhutan to Afghanistan. Commonly cultivated in public and private gardens.

4. CUPRESSACEAE

4. *Cupressus sempervirens* L. Mediterranean Cypress; Italian Cypress

Native of S. Europe and W. Asia. It is the ancient classical Cypress of Greeks and Romans; introduced into India at an early time. Occasionally grown in gardens for its ornamental foliage.

5. *Thuja orientalis* L. Oriental Arbor-vitae.

Syn. *Biota orientalis* (L.) Endl. *Platycladus orientalis* Franco.

Indigenous to China and Japan (MacMillan 1952). Introduced into India during the last quarter of the 17th century. Frequently planted for its ornamental foliage. Local name: *Morpankhi*.

5. MAGNOLIACEAE

6. *Magnolia grandiflora* L. Bull Bay; Southern Magnolia; Tree Lotus

A tropical American species; introduced into India probably during the year 1840. Occasionally planted in gardens.

6. ANNONACEAE

7. *Annona reticulata* L. Bullock's Heart; Ramphal

Native of tropical America. Introduced into India during the last quarter of the 17th century; now completely naturalized (Voigt 1845). Cultivated for its fruits.

8. *A. squamosa* L. Sugar Apple; Sweetsop; Sitaphal

Native of tropical America. It was one of the first American plants introduced probably by the Portuguese into India during the 16th

century (Merrill 1954); frequently cultivated and widely naturalized in India.

7. PAPAVERACEAE

9. *Argemone mexicana* L. Mexican Poppy

Native of Mexico and other parts of Central America. Introduced into India at an early time. Common in waste lands, roadsides, recently disturbed soils, etc.

10. *A. ochroleuca* Sweet. Prickly Poppy

An introduced Mexican weed in India; often found mixed with *A. mexicana* Linn. in waste lands and recently disturbed soils near Hathikhana, Ranchi.

11. *Eschscholzia californica* Schau. Californian Poppy

Native of America (Bailey 1949). Flowers remain open during the day, pale-yellow to orange. Cultivated in gardens as an annual.

8. BRASSICACEAE

12. *Eruca sativa* Mill. Garden Rocket

Native of Eurasia (Robbins 1940). Frequently cultivated as a winter-season crop.

9. CARYOPHYLLACEAE

13. *Dianthus caryophyllus* L. Carnation

Native of Europe and North Africa (Backer & Brink 1963). Commonly cultivated in gardens as an ornamental annual.

14. *Silene conoidea* L.

Native of temperate Asia and Europe. A few plants were located in vegetable plots and wheat fields of the district.

15. *Spergula arvensis* L. Corn Spurry

An introduced European weed (Ridley 1930; Backer & Brink 1963); probably introduced as an impurity in vegetable seeds. Frequently found as a winter-season weed in cultivated fields and fallow land.

10. PORTULACACEAE

16. *Portulaca grandiflora* Hook. Rose-Moss

Native of South America (Walters 1964). Cultivated in gardens and hanging baskets; introduced into India by the Portuguese during the last part of the 16th century.

17. *P. oleracea* L. Purslane

A well-known weed in Europe. Frequently found as a weed in gardens and cultivated grounds.

11. THEACEAE

18. *Camellia japonica* L. Garden Camellia; Japanese Rose

Syn. *Thea japonica* (L.) Nois.

Native of Japan (Backer & Brink 1963). Introduced into India about 1795. Not common; often planted in private and public gardens.

12. MALVACEAE

19. *Althaea rosea* (L.) Cav. Hollyhock

Native of China or Asia Minor (Backer & Brink 1963). A tall herb with hairy stems. Introduced into India about 1835. Common in gardens. Local name: *Gul-Khera*.

20. *Hibiscus mutabilis* L. Cotton-Rose

Native of China. Commonly cultivated in gardens.

21. *H. rosa-sinensis* L. Rose of China; Chinese Hibiscus; Shoe Flower

Native of China (Li 1959; Pal & Krishnamurthi 1967). According to Robyns (1966), it is presumably indigenous to eastern Asia; now common in all warm countries. Extensively planted as an ornamental hedge plant.

22. *H. schizopetalus* (Mast.) Hook. f. Fringed Hibiscus

Native of tropical East Africa (Robyns 1966); introduced into India (Pondicherry) in October 1886 (Gupta & Marlange 1961). Common in private and public gardens.

23. *Malachra capitata* L.

Native of tropical America (Backer & Brink 1963). Introduced into India in the middle of the 19th century as a fibre plant. Occurs commonly in the area.

24. *Malvastrum coromandelianum* (L.) Garcke

A widely distributed weed of American origin; first described from the material collected in the Old World (Merrill 1945). Common in fields and waste lands.

13. BOMBACACEAE

25. *Adansonia digitata* L. Baobab; Monkey-Bread Tree

Native of tropical Africa. It is considered to be one of the longest lived trees in the world. It was introduced by Arab traders and by African negroes employed in the Moghul army. Some trees are planted near Dorunda Bridge, Ranchi.

14. STERCULIACEAE

26. **Dombeya mastersii** Hook. f. Masters Dombeya
Native of tropical Africa (MacMillan 1952). Occasionally cultivated in gardens as an ornamental shrub.
27. **Kleinhovia hospita** L. Tanag
Native of Malaysia. Cultivated in gardens.

15. ERYTHROXYLACEAE

28. **Erythroxylum coca** Lamk. Cocaine Plant
Indigenous to Peru and Bolivia. It was introduced into Ceylon in 1870 and its cultivation was prohibited in British colonies in 1914 (MacMillan 1952). Cultivated for the drug cocaine which is derived from its leaves.

16. GERANIACEAE

29. **Achimenes grandiflora** DC. Bigpurple Achimenes
Native of tropical America. Introduced into Calcutta Botanic Garden in 1838. Commonly cultivated in gardens.

17. OXALIDACEAE

30. **Averrhoa carambola** L. Carambola; Komarac
A tropical species; now widely spread in the hotter regions. Duthie (1903) suggested that the species was introduced into India from America by the Portuguese in the 16th century. Hill (1952) considered it to be a native of South-eastern Asia. Hayes (1957) believed it to be a native of Moluccas or of Malayan region. Cultivated in gardens for its fruits.
31. **Oxalis corniculata** L. Yellow Oxalis; Yellow Wood Sorrell
A native of Europe (Robbins 1940). Common in lawns, green houses and gardens. Local name: *Pusi-ganju*.

18. TROPAEOLACEAE

32. **Tropaeolum majus** L. Garden Nasturtium
Native from Peru to Columbia (Backer & Brink 1963). Flowers yellow, red or scarlet. Cultivated as a garden annual in beds and borders.

19. RUTACEAE

33. **Citrus maxima** Merr. Pummelo or Shaddock
Native of Malaysia and Polynesia (Maheshwari 1961). Introduced

into India from Java and into West Indies by Captain Shaddock (Bruhl 1908). Cultivated for its fruit.

20. MELIACEAE

34. *Melia azedarach* L. Persian Lilac

Native of Persia, Asia Minor, etc. Commonly cultivated as an ornamental tree.

35. *Swietenia mahagoni* Jacq. Mahogany

Native of tropical America (Backer & Brink 1965). It was introduced into Indian Botanic Garden, Calcutta in 1795 from the West Indies (Roxburgh 1824). Commonly planted in gardens.

21. SAPINDACEAE

36. *Litchi chinensis* Sonner. Lychee

A Chinese species; reported to have been introduced into India towards end of the 18th century. Commonly cultivated for its fruit.

22. ANACARDIACEAE

37. *Anacardium occidentale* L. Cashew; Kaju

Native of Brazil and appears to have been under cultivation throughout tropical America before the voyage of Columbus to the New World. It seems to have been introduced into India from Brazil by the Portuguese in the 16th century and is now naturalized in the forests of Chittagong and all over the coastal regions of India (Mehra 1966).

Acosta (1578) mentioned: "This tree gives a fruit called *caju*, which being a good stomachic, and of good flavour, is much esteemed by all who know it. This fruit does not grow everywhere, but is found in gardens at the city of Santa Cruz in Cochin". Frequently cultivated in private gardens.

23. PAPILIONACEAE

38. *Aeschynomene americana* L. American Sensitive Plant; American Jointvetch

Native of tropical America; introduced into India in recent years. It was reported for the first time from Hazaribagh (Chatterjee 1960), and found lately in the vicinity of Kanke, near Ranchi.

39. *Arachis hypogea* L. Peanut; Groundnut

Native of Brazil; probably introduced into India in the 16th century. Commonly cultivated for its pods.

40. **Calopogonium mucunoides** Desv.

Native of America (Backer & Brink 1963). It was introduced into Burma in 1920. Cultivated as a green manure.

41. **Centrosema pubescens** Benth. Centro

Native of tropical America. Introduced into India during the early part of 19th century. It has been cultivated in Malaya since 1921 in rubber, oil-palm and coconut plantations. Cultivated at Kanke as a cover crop.

42. **Crotalaria incana** L. Woolly Rattle Pod

Native of America (Backer & Brink 1963). Bressers (1951) reported it from Khunti (Ranchi) where it is now naturalized. Not common.

43. **Glicicidia sepium** (Jacq.) Kunth ex Walp. Madre

Native of eastern region of Central and South America (Backer & Brink 1963). It was introduced into Bombay from Ceylon in 1916 and plants were raised from the seeds. Cultivated as an ornamental tree.

44. **Lathyrus aphaca** L.

An Eurasian species; found as a weed in cultivated fields and used as fodder.

45. **Lens culinaris** Medik. Lentil

Syn. *L. esculenta* Moench.

Indigenous to Central Europe, Mediterranean region and Western Asia including Afghanistan. Introduced into India by the early Aryan settlers (Bruhl 1908). Cultivated for the seeds.

46. **Medicago lupulina** L. Black Medic

Native of Europe; introduced into India during the 15th or 16th century by European settlers. Common as a winter-season weed in waste grounds and cultivated fields.

47. **M. polymorpha** L. Bur Clover; Burr Medic

Syn. *M. denticulata* Willd.

Native of Europe; probably introduced into India during the 15th or 16th century along with wool to which its fruits adhere by their curved spines. A common weed in cultivated fields.

48. **Melilotus alba** Desr. White Sweet Clover; Bokhara Clover

Indigenous to Europe and western temperate Asia. Naturalized as a winter season weed in moist situations and cultivated fields.

49. **M. indicus** (L.) All. Yellow Sweet Clover; Hexham Scent

Native of South Europe and South-Western Asia (Backer & Brink 1963); introduced into India at an early time. Common in waste lands and grassy areas.

50. *Pueraria phaseoloides* (Roxb.) Benth. Kudzu

Syn. *P. javanica* Benth.

A native of tropical Asia; first introduced into the Tenasserim Circle, Burma in 1929 from Java (Anon. 1936). Cultivated at Kanke, near Ranchi as a green manure.

51. *Trifolium alexandrinum* L. Berseem; Egyptian Clover

Native of Egypt and Syria (Maheshwari 1963). According to a report by the Agricultural Research Institute, Pusa, berseem was introduced into India in 1917 from Egypt. Cultivated at Kanke and other agricultural farms as a green manure.

52. *Vicia hirsuta* (L.) Gray. Tiny Vetch

Native of Europe, West Africa and Continental Asia (Backer & Brink 1963). According to Duthie (1903), it was introduced into India from Europe, where the plant is common. Common in cultivated fields and waste lands.

53. *V. sativa* L. Common Vetch

Native of Europe, North Africa and West Asia (Backer & Brink 1963). Introduced as a forage and cover crop in many parts of the world. Common in cultivated fields and moist, waste grounds.

24. CAESALPINIACEAE

54. *Bauhinia tomentosa* L. St. Thomas-Tree

Native of tropical Asia and Africa. According to J. D. Hooker, it was introduced at Kew in 1860, and probably came to India about 1872 (Bor & Raizada 1954). Cultivated in private and public gardens.

55. *Poinciana pulcherrima* L. Flowerfence Poinciana

Probably native of South America. According to Van Rheede (1686), it was cultivated in Indian gardens as early as 1680. Commonly cultivated as an ornamental in hedges and garden shrubberies.

56. *Cassia javanica* L. White and Pink Shower

Native of Sumatra and Java. Introduced into India in the late 17th century. Planted in gardens, parks and roadsides.

57. *C. occidentalis* L. Coffee Senna

A circumtropical weed, possibly of S. American origin. Introduced long before the publication of Roxburgh's *Flora Indica* (1824). Common along roadsides and in waste lands. Local name: *Chakundar*.

58. *C. renigera* Wall. ex Benth.

Native of dry zone of Upper Burma; introduced into India in the late 17th century (Troup 1921). Cultivated in gardens and roadsides.

59. **C. siamea** Lamk. Yellow Shower; Siam Cassia

Native of South-east tropical Asia (Backer & Brink 1963). It was planted in Namkum (Ranchi) in the middle of the 18th century for lac culture. Planted in gardens.

60. **C. sophera** L.

Introduced from tropical America. Naturalized in waste lands.

61. **C. tora** L. Sickle-Pod

Native of America (Backer & Brink 1963). Introduced in the early 17th century and became widespread in India by 1824 (Srivastava 1964). A common weed along roadsides, in waste grounds, etc. Local name: *Chakundar*.

62. **Colvillea racemosa** Boj. Colville's Glory

Native of Mauritius and Madagascar. Introduced in the Indian Botanic Garden, Calcutta in 1840 (Voigt 1845). Cultivated as an ornamental tree.

63. **Delonix regia** (Boj. ex Hook.) Rafin. Peacock-Flower; Flame Tree; Gulmohr

Syn. *Poinciana regia* Boj. ex Hook.

Native of Madagascar. Some plants were taken to Mauritius about 1824 and their seeds were brought to England. It was then introduced into tropical countries (Cowen 1950). Bruhl (1908) mentioned that it was introduced into India from Mauritius about the year 1840. Commonly cultivated as an ornamental tree.

64. **Schizolobium excelsum** Vog. Brazilian Fire Tree

Native of S. America (Backer & Brink 1963). Introduced into India in the middle of the 18th century. Planted in avenues and gardens.

65. **Tamarindus indica** L. Tamarind

Probably a native of tropical Africa. It is said to be Sudanic in origin (Murdock 1959). In India, it was introduced at an early time. Commonly planted along roadsides, in gardens, etc. Local name: *Jojo*.

25. MIMOSACEAE

66. **Acacia decurrens** Willd. Green Wattle

Native of Australia (Backer & Brink 1963). According to Matthew (1969), Wattle was introduced in Kodaikanal by Sir Vere Levinge in 1867, but large scale introduction began only in 1883. It was also introduced in the Nilgiris in 1832 by Capt. Dunn. Planted in the area.

67. **A. farnesiana** Willd. Cassie; Sweet Acacia; Aroma

Native of tropical America; introduced during the 18th century. Occasionally cultivated in hedges and fields.

68. **Leucaena leucocephala** (Lamk.) Wit.
Syn. *L. glauca* Benth.
Native of the warmer parts of the New World; now cultivated and naturalized in tropical countries.
69. **Mimosa pudica** L. Sensitive Plant
Native of Brazil and was introduced into India at a very early time. Occurs in waste lands, roadsides, etc.
70. **Pithecellobium dulce** (Roxb.) Benth. Manila Tamarind
Indigenous to Mexico. It is an early introduction by the Spaniards into the Philippine Islands and then into India. It is said to be sensitive to frost and does not succeed on the Ranchi plateau (Haines 1922).
71. **Samanea saman** (Jacq.) Merr. Rain-Tree
Native of tropical America. Introduced in the vicinity of Calcutta and the plantations of Kadapah and Kadur, etc. as an ornamental tree of rapid growth during the first half of the 18th century (Bruhl 1908). Cultivated as an ornamental or avenue tree.
72. **Prosopis juliflora** DC. Mesquite
Native of the arid regions of Mexico and Central America; introduced into India from Kew, England in 1877 for afforestation purposes. Cultivated in hedges.

26. ROSACEAE

73. **Eriobotrya japonica** (Thunb.) Lindl. Loquat; Japanese Medlar
Native of Japan (Backer & Brink 1963). Cultivated for its fruits which are sold in the market.
74. **Prunus persica** (L.) Batsch. Peach
Native of China (Backer & Brink 1963). It was recorded from Palnis, S. India in 1858 by Beddome. Planted in gardens.
75. **Rosa banksiae** Ait. f. Banksia Rose
Native of China. Commonly planted in gardens.
76. **R. damascena** Mill. Damask Rose
Origin unknown; probably a cultigen. It is not till the close of the 13th century that we find any reference of rose-water. In India, attar of roses is said to have been first discovered by Begum Nur-i-Jehan in 1612 A.D. (Bruhl 1908). Commonly cultivated.
77. **R. centifolia** L. Cabbage Rose
Native of Caucasus. It is one of the most ancient of cultivated roses. Introduced into Calcutta Botanic Garden in 1841 (Voigt 1845).

27. CRASSULACEAE

78. *Kalanchoe pinnata* Pers. Lefe-Plant.

Syn. *Bryophyllum pinnatum* Oken; *B. calycinum* Salisb.

Native of Africa (Backer & Brink 1963). Introduced into Calcutta Botanic Garden by Lady Clive in 1799 and thence spread all over Bengal (Voigt 1845). Frequently found in private gardens.

28. COMBRETACEAE

79. *Quisqualis indica* L. Rangoon-Creeper

Native of Burma, Malaya, New Guinea and Philippines (Bailey 1949). Commonly cultivated in gardens for ornamental purposes.

29. MYRTACEAE

80. *Callistemon citrinus* (Curt.) Skeels. Lemon Bottle-Brush

Syn. *C. lanceolatus* Sweet.

Native of Australia (Backer & Brink 1963). Introduced into India about the year 1804. Cultivated in gardens.

81. *Eucalyptus citriodora* Hook. Lemon-Scented Gum

Native of Australia. An early introduction into India; first introduced at Nandi Hills by Tipoo Sultan. Frequently planted.

82. *E. camaldulensis* Dehnh. Red Gum

Syn. *E. rostrata* Schlecht.

Native of Australia; introduced in Punjab, Uttar Pradesh and Rajasthan. It grows well in some plantations in the district.

83. *Melaleuca leucadendra* (L.) L. Cajeput Tree; Punk Tree

Syn. *M. leucadendron* L.f.

Introduced into Calcutta Botanic Garden in 1811 (Bruhl 1908). Cultivated in gardens as an ornamental tree.

84. *Psidium guajava* L. Guava

Native of tropical America. It is a typical Mexican introduction via the Acapuloc-Manila Galleon route, after 1565 into the Old World Tropics (Merrill 1954). Introduced into India by the Portuguese (Watt 1892). Commonly cultivated for its fruit. Local name: *Tambarasa*.

30. PUNICACEAE

85. *Punica granatum* L. Pomegranate

Native of Iran and now naturalized in the Mediterranean area and southern Asia. Cultivated for its fruits.

31. CARICACEAE

86. *Carica papaya* L. Papaya

Native of tropical America. It was not known in India before the

arrival of the Portuguese, who introduced it in the 16th century (Mehra 1965). Commonly cultivated for its fruit.

32. PASSIFLORACEAE

87. **Passiflora edulis** Sims. Purple Granadilla; Edible Passion-Flower
Native of Brazil (Bor & Raizada 1954). Introduced into India about 1826. Rather uncommon in the area.

88. **P. foetida** L. Stinking Passion-Flower
An American species; introduced into India during the 19th century (Srivastava 1964).

33. CACTACEAE

89. **Opuntia dillenii** Haw. Prickly Pear
Native of Mexico; now naturalized all over India. It was introduced in Europe as early as at the end of the 15th century (Bally 1969). It was brought in India well before 1800 A.D. from Europe with the object of establishing the cochineal industry. Frequently found in waste lands and fences. Local name: *Nagphani*.

34. ARALIACEAE

90. **Polyscias fruticosa** (L.) Harms.
Syn. *Panax fruticosa* Hort.
Native of tropical Asia. This shrub was introduced into Indian Botanic Garden, near Calcutta from Moluccas in 1798 (Bruhl 1908). Cultivated in hedges.

35. RUBIACEAE

91. **Coffea arabica** L. Arabian Coffee
Native of Abyssinia (Backer & Brink 1965). Voigt (1845) writes: "From Arabia and Ethiopia, it has been carried to nearly all parts of the world within the tropics". It might have been cultivated in India from the 18th century. Cultivated in the area.

92. **Gardenia jasminoides** Ellis.
Syn. *G. florida* L. Rosal
Native of China and Japan (Backer & Brink 1965). Introduced into India in the 17th century. Cultivated in gardens and hedges.

93. **Hamelia patens** Jacq. Scarlet Hamelia
Syn. *H. erecta* Jacq.
Native of S. America and southern parts of N. America (Backer & Brink 1965); introduced into India in the early 18th century. Accord-

ing to Bruhl (1908), the species flowered in Indian Botanic Garden in 1840. Cultivated in gardens and hedges.

94. **Mussaenda flava** (Verdcourt Bakh. f.

Syn. *M. luteola* Delile nom. illeg.

Native of Africa (Haines 1922). It was first introduced into Europe about 1860 (Bor & Raizada 1954), and came to India in the later part of the 18th century. Cultivated as an ornamental shrub in gardens and parks.

95. **Richardia brasiliensis** Gomez.

Syn. *Richardsonia pilosa* H. B. & K. Mexican Clover

Native of S. America (Backer & Brink 1965). Introduced into India in the early 19th century. It was first reported from Shillong by Kanjilal *et al.* (1939). Very common in Kanke and Boria along roadsides, in waste lands and cultivated fields. Local name: *Hadapoda*.

36. ASTERACEAE (nom. alt.: Compositae)

96. **Acanthospermum hispidum** DC. Staff Burr

Native of tropical America. It was introduced into South India along with ballast and packing material of some imported goods. Gamble (1921) first reported it from South Kanara and Salem districts. Later, Srivastava (1964) reported it from Ranchi. Occurs as a weed along roads, railways and in forest clearings.

97. **Adenostemma lavenia** (L.) Ktze.

Syn. *A. viscosum* Forst.

Native of South America, and was widespread throughout India in the 19th century. Not common; found in grassy areas in valleys.

98. **Ageratum conyzoides** L. Tropic Ageratum

A South American species now well naturalized throughout India. Ridley (1930) mentioned that it travels by adhesion to cloth or to hair of animals. Very common in waste lands, roadsides and cultivated fields. Local name: *Pooru*.

99. **Blainvillea acmella** (L.) Philipson.

Syn. *B. rhomboidea* Cass.; *B. latifolia* DC.

Native of South America (Ridley 1930); introduced into India during the 18th century. Frequently found in moist, waste lands.

100. **Brachycome iberidifolia** Benth. Swan River Daisy

Native of Australia (Bailey 1949). Cultivated as a garden annual.

101. **Calendula officinalis** L. Marigold

Native of S. Europe. (name, *Calendula* means 'of the Kalends' i.e. the first of every month—because Marigold can be found in bloom in almost every month of the year). Coats (1956) mentioned: "Some

authorities give 1753 as the date of introduction of the marigold into England from Europe, but there are numerous references to it in the 13th or 14th centuries and it seems to have been widespread and familiar even then". It is said that the pain of a wasp or bee sting can be alleviated by rubbing with the flower. Extensively cultivated in gardens, parks, etc.

102. **Chrysanthemum cinerariaefolium** (Trev.) Vis. Dalmatian Pyrethrum
Syn. *Pyrethrum cinerariaefolium* Trev.

Native of Dalmatia (Bailey 1949). Introduced into Pondicherry, India in 1886 (Gupta & Marlange 1961). Matthew (1962) mentions: "The flowers of the Pyrethrum were in great demand during World War II, when its value as an insecticide was realized..... The Government of India urged the Madras State Government,..... to undertake large scale planting..... The scheme was already started in the Nilgiris in 1942 with seeds brought from Kenya". Cultivated in gardens and sometimes found as an escape.

103. **Coreopsis tinctoria** Nutt. Golden Coreopsis

A native of N. America (Coats 1956). Several varieties were introduced in many gardens near London by 1725. This species probably came to India about 1740. Extensively cultivated in gardens.

104. **Cosmos bipinnatus** Cav. Common Cosmos

Native of Mexico. Common in gardens as a border annual; used for table decoration.

105. **Dahlia pinnata** Cav. Aztec Dahlia

Syn. *D. hortensis* Guill.

Native of Mexico. It was discovered by Von Humboldt in 1789, when the seeds were sent to the Royal Garden, Madrid. From there, it was imported into England in 1804 by the Marchioness of Bute. In India, it was probably introduced in 1865 (Maheshwari 1955). It is a favourite garden plant in the area.

106. **Elephantopus scaber** L.

An American weed; introduced in to the Old World during post-Columbian time and is now widespread throughout the region. Common in waste lands, forest undergrowth, etc. Local name: *Tape-Singh*.

107. **Erigeron bonariensis** L. Fleabane

Syn. *E. linifolius* Willd.

Native of the American tropics and now pantropical in distribution. It was introduced into the Old World in the 16th century. Common in gardens, lawns, etc.

108. **Gaillardia picta** Sweet. Painted Gaillardia

Native of North America. It is a popular annual in garden beds and is extensively used for the decoration of bowls and vases.

109. **Galinsoga parviflora** Cav. Kew Weed; Yellow Weed

Native of tropical America; now well naturalized in the country and grows abundantly in cultivated plots near Ranchi. Local name: *Pardhia*.

110. **Lagascea mollis** Cav.

An introduced Mexican weed in India; now well naturalized all over the hilly region.

111. **Sclerocarpus africanus** Jacq.

Native of South America. Introduced into India about 1872 and became common throughout the region (Srivastava 1964). Bressers (1951) first reported it from Ranchi. Common amongst grass.

112. **Tagetes erecta** L. Aztec or African Marigold

Native of Mexico; once supposed to be a native of Africa (Bailey 1949). Flowers yellow to orange. Cultivated as a garden annual.

113. **Tithonia diversifolia** A. Gray. Wild Sun Flower

Native of Central America (Bailey 1949). It was introduced in Ceylon in 1851. Flower heads yellow, like sunflower. Cultivated in gardens as an annual.

114. **Tridax procumbens** L.

Native of the New World; introduced into India about the year 1830 as an ornamental plant (Ridley 1930). It is now widespread over tropical India. Very common on old walls, in grasslands, roadsides, waste lands, etc. Local name: *Manduli-ba*.

115. **Zinnia elegans** Jacq. Common Zinnia

Native of Mexico (Bailey 1949). Extensively cultivated as a rainy and summer-season garden annual.

37. LOBELIACEAE

116. **Lobelia radicans** Thunb.

It was accidentally introduced from China into the Indian Botanic Garden, Sibpur, near Calcutta. Naturalized in the vicinity of Ranchi (Bruhl 1908).

38. PRIMULACEAE

117. **Anagallis arvensis** L. Scarlet Pimpernel

Indigenous to Europe and Mediterranean region (Taylor 1955). It was introduced into India about 1500-1665 by the early Dutch settlers

from the East Indies or by the Spaniards into the Philippines. It is probable that it was introduced into E. Bengal, Assam, etc. as an impurity, at some time with the vegetable seeds or seeds of garden plants. Common in garden beds and in moist situations.

39. SAPOTACEAE

118. **Manilkara achras** (Mill.) Fosberg. Sapodilla; Chikoo
Syn. *Achras-zapota* auct., non L.

Native of tropical America. It was introduced into India by the Portuguese in the 16th century. Cultivated for its fruit. The most important product of the tree is "chicle" gum which is used in the manufacture of chewing gum.

40. EBENACEAE

119. **Diospyros discolor** Willd. Mabolo

Native of Philippines (MacMillan 1952). Introduced into India in the early 18th century. Cultivated in gardens.

41. APOCYNACEAE

120. **Allamanda cathartica** L. Kampanilya

Native of tropical S. America. It was introduced into India from Guiana (Voigt 1845). Cultivated as an ornamental in private and public gardens.

121. **Catharanthus roseus** (L.) G. Don. Madagascar Periwinkle

This species might be native to America, especially West Indies; believed in recent years to have originated in Madagascar. Probably first introduced as an ornamental plant. Flowers rose-purple. Extensively planted in gardens, private bungalows, etc.

122. **Catharanthus roseus** G. Don. var. **albus** Sweet

An erect, pubescent subshrub. Flowers white. Planted in gardens in association with the former species.

123. **Plumeria rubra** L. forma **rubra** Frangipani Tree

Distributed from Mexico to Venezuela, Ecuador and West Indies. Introduced into India in 1841 (Voigt 1845). Cultivated in gardens, parks and lawns.

124. **P. rubra** L. forma **acutifolia** Woodson. Pagoda Tree; Temple tree

Indigenous to tropical America. Introduced into India in 1841 (Voigt 1845). Cultivated as an ornamental tree in gardens. Local name: *Gulanch*.

125. **Thevetia peruviana** (Pers.) K. Schum. Yellow Oleander; Cook Tree
Syn. *T. neriifolia* Juss. ex Miq.

Native of S. America. It is a great favourite of Hindus who offer its flowers to God Shiva. It was brought under cultivation in Europe in 1735 and since then distributed throughout the tropics as a showy, ornamental plant (Bor & Raizada 1954). It might have been introduced into India about 1795. Commonly planted in hedges.

126. **Trachelospermum jasminoides** Lem. Chinese Star Jasmine
Syn. *T. divaricatum* K. Schum.

Indigenous to China and Japan (Bor & Raizada 1954). It was introduced into Europe from Shanghai by Robert Fortune and came to India in the 17th century. Cultivated in gardens as a creeper on walls and trellises.

42. ASCLEPIADACEAE

127. **Cryptostegia grandiflora** R. Br. Rubber Vine

Native of Africa (Bailey 1949). A climbing shrub. Flowers lilac-purple. Planted in gardens.

43. BORAGINACEAE

128. **Heliotropium indicum** L.

This species is probably of American origin (Reed 1964). It was introduced into the Old World about 1500 A.D. in ballast or baggage (Merrill 1954). Common in muddy soils, waste lands and periodically desiccating pools and ditches.

44. CONVULVACEAE

129. **Convolvulus arvensis** L. Wild Morning-Glory; Lesser Bindweed

Native of Europe and Continental Asia (Backer & Brink 1965); now widespread in subtropical and tropical regions. Common as a weed in cultivated fields during the winter season.

130. **Ipomoea batatas** (L.) L. Sweet Potato

Native of Brazil; introduced into India by the Portuguese in the early part of 16th century (Watt 1890). Commonly cultivated for the edible tubers.

131. **I. fistulosa** Mart. ex Choisy.

Syn. *I. crassicaulis* Robins

Native of South America; probably introduced into India about a century ago by the Agri-Horticultural Society, Alipur, Calcutta. It was known under cultivation in Indian Botanic Garden, Sibpur, Calcutta during the year 1879. It grows extensively along the water courses,

ponds and ditches, roadsides, railway sidings, etc. and is used as a hedge. Local names: *Thethar ka phool*; *Amri*.

132. **I. nil** (L.) Roth.

Syn. *I. hederacea* auct. non. Jacq.

Native of Tropical America. A twining hairy annual with blue or light purple flowers. Grown as an ornamental along the trellises and walls of gardens.

133. **Volvulopsis nummularia** (L.) G. Roberty.

Syn. *Evolvulus nummularius* L.

Native of Tropical America (Roberty 1952). Introduced into India during the last part of the 18th century. Bressers (1951) first recorded it from Ranchi. Frequently found in waste lands, fallow fields, etc.

45. SOLANACEAE

134. **Brunfelsia americana** L.

Native of West Indies (Backer & Brink 1965). Introduced into India in 1841 (Voigt 1845). Occasionally found in gardens as an ornamental annual.

135. **Capsicum frutescens** L. Chilli; Spur Pepper; Chile Pepper

Syn. *C. annum* L. var. *frutescens* (L.) Ktze.

Native of tropical America. Mehra (1966) mentioned: "Bontius (1631) thought that it was carried from S. America to Indian Archipelago and thence to India (Yule & Burnell 1886). The Portuguese brought the plant to India from Pernambuco, according to Clusius (Dymock *et al.*)". Commonly cultivated for its fruits.

136. **Cestrum nocturnum** L. Lady-of-the-Night

It is an American contribution to Oriental gardens. Widely cultivated for its fragrant flowers at night.

137. **Lycopersicon lycopersicum** (L.) Karsten. Tomato

Syn. *L. esculentum* Mill.

Native of W. S. America (Bailey 1949). It was known in cultivation in W. Europe by 1561 (Staffeu 1969). Extensively cultivated for its fruits.

138. **Nicotiana plumbaginifolia** Viv.

Native of tropical America; introduced into India quite early, probably during 1824-1845 (Goodspeed 1954; Srivastava 1964). It spreads from Bengal towards the west and later in the northern regions. A common weed in cultivated fields, roadsides, etc.

139. **Physalis minima** L. Wild Gooseberry

Native of S. America. It spreads through cattle, birds and horse dung, and was introduced into India during the 17th century from Malaysia (Ridley 1930). Occurs as a weed in waste lands and fallow fields.

140. **Solanum tuberosum** L. Potato

Native of the Andean highlands of South America. It was introduced into Europe in 1570 and came to India in the later part of 16th century (Mehra 1966).

46. SCROPHULARIACEAE

141. **Antirrhinum majus** L. Snapdragon

Native of S. Europe, Syria and N. Africa (Backer & Brink 1965). According to Gupta and Marlange (1961), it was introduced into India in 1886. It is a popular annual for outdoor beddings and edgings.

142. **Calceolaria mexicana** Benth. Common Slipper Flower

Native from Mexico to the Andes of Peru and Chile (Bailey 1949). It was introduced into India during 1845-1890. Grown in gardens.

143. **Mecardonia dianthera** (Swartz) Pennell.

Syn. *Herpestis chamaedryoides* H. B. & K.

Native of tropical America and recently introduced into India. It was recorded for the first time from Bengal by Prain (1903). Bressers (1951) first reported it from Ranchi. A weed in lawns, gardens and paddy fields.

144. **Scoparia dulcis** L. Sweet Broomwort

Native of tropical America; now spread throughout the Old World tropics. Common in moist waste lands, cultivated in paddy fields, etc. Local name: *Ipid-piong*.

47. BIGNONIACEAE

145. **Jacaranda mimosifolia** D. Don. Jacaranda

Syn. *J. ovalifolia* R. Br.

Native of Brazil and N. W. Argentina (Maheshwari 1963). It was introduced into India in 1841 (Voigt 1845). Planted in parks and gardens.

146. **Kigelia pinnata** DC. Sausage Tree

Native of Africa (Bailey 1949). Flowers scarlet-coloured. Fruits ground-like, hanging on cord-like stalks. Planted in gardens.

147. **Tecoma stans** (L.) H.B. & K. Yellow Elder; Yellow-Bells

Native of Tropical America. Commonly planted in the hedges of gardens and also found as an escape.

48. MARTYNIACEAE

148. **Martynia annua** L. Tiger's Claw; Devil's Claw

Native of tropical America; introduced into India before 1843 and now well naturalized. It spreads by the attachment of its hooked fruits to goats, sheep, etc. (Ridley 1930). Common on rubbish heaps, in waste lands and roadsides. Local name: *Budi Rama*.

49. ACANTHACEAE

149. **Thunbergia erecta** T. Anders. Bush Clockvine

Native of tropical America (MacMillan 1952). It was introduced into India in 1899 from Kew (Bor & Raizada 1954). Cultivated in gardens.

50. VERBENACEAE

150. **Clerodendrum philippinum** Schauer. Nassau-Rose; Glorybower

Syn. *C. fragrans* Hort. ex Vent; *C. japonicum* var. *pleniflorum* Mahesh.

Native of China (Bruhl 1908). Extensively cultivated in gardens and well naturalized in tropical areas.

151. **C. thomsonae** Balf. f. Bleeding Heart; Thomson Glorybower

Native of tropical Africa (Backer & Brink 1965). It was introduced into England (Balfour, Edinburgh) in 1861 by a missionary from Old Calabar on the west coast of Africa and came to India about 1876 (Bor & Raizada 1954). Cultivated in private gardens.

152. **Duranta repens** L.

Syn. *D. plumieri* Jacq. Pigeonberry; Golden Dewdrop

Native of S. America and West Indies (Maheshwari 1963). Commonly planted in gardens and hedges.

153. **Lantana camara** L. var. **aculeata** (L.) Moldenke. Spiny Lantana; Planter's Curse

Syn. *L. aculeata* L.

Native of America (Backer & Brink 1965); introduced in the Calcutta Botanic Garden in 1809. According to Ridley (1930), it was introduced as an ornamental plant and was first recorded from Ceylon in 1824. Widely cultivated and common as a weed in forest clearings, cultivated fields and waste lands. Local name: *Poostu*.

154. **L. trifolia** L.

Syn. *L. indica* Roxb.

Widely distributed throughout tropical America (Moldenke 1955);

introduced into India at an early time. Bressers (1951) first reported it from Ranchi. Occasionally found in waste lands.

155. **Lippia alba** (Mill.) N. E. Br. ex Britton & Wilson.

Syn. *L. geminata* H. B. & K.; *Lantana alba* Mill.

Widely distributed throughout the West Indies, Mexico, Central America, tropical and subtropical South America to Argentina and introduced elsewhere (Moldenke 1955). Frequently found in marshy lands and moist situations.

156. **Petrea volubilis** L. Purplewreath Retrea

Native of tropical America (Maheshwari 1963). It was introduced into India in 1841 (Voigt 1845). Cultivated in gardens.

157. **Stachytarpheta jamaicensis** (L.) Vahl. Jamaica False Valerian

Syn. *S. indica* Vahl; *Verbena jamaicensis* L.

Native of America (Moldenke 1955). Introduced into India in the early 19th century. It escapes from cultivation and has become a pest in the vicinity of Ranchi. Local name: *Sitir-kar*.

158. **S. mutabilis** (Jacq.) Vahl. Variable False Valerian

Native of tropical America; introduced into India in the last part of the 18th century for the medicinal properties of its leaves which are applied to wounds and sores.

51. LAMIACEAE (nom. alt.: Labiatae)

159. **Hyptis suaveolens** (L.) Poit. Ganga-Tulsi

Native of S. America; found throughout Africa and Asia (Epling 1936). It was introduced into India during 1872-1897 when Hooker published his Flora of British India. Occurs as a weed in waste lands.

160. **Salvia coccinea** Juss. Red Salvia

Widely distributed in tropical America. Commonly cultivated as an ornamental in gardens under the name "Salvia" and "Scarlet Sage". Flowers scarlet in erect, lax spikes.

52. NYCTAGINACEAE

161. **Bougainvillea glabra** Choisy. Bougainvillea

Native of Brazil. It was introduced into England in 1860 from Brazil by way of Mauritius and thence into India during 1884-1894 (Bor & Raizada 1954). Commonly cultivated as an ornamental in private and public gardens.

162. **B. spectabilis** Willd. Hairy Bougainvillea

Native of Brazil. Introduced into India from England during 1860 (Bor & Raizada 1954). Commonly cultivated in gardens.

163. **Mirabilis jalapa** L. Four o'clock; Marvel-of-Peru

Native of tropical America (Webb 1964). Dymock *et al.* (quoted in Mehra 1966) mentioned as follows: "Five varieties of this plant with red, white, yellow, red and white, and red and yellow flowers were introduced from the West Indies in 1596 and these must have been carried by the Portuguese to the East shortly afterwards, as the plant is said to have been introduced into Persia in the reign of Shah Abbas, the First, and was established on the Malabar coast in the time of Van Rheede." Cultivated as an ornamental plant.

53. AMARANTHACEAE

164. **Alternanthera paronychioides** St. Hil.

Native of South America and West Indies. Introduced into India during the 20th century. Common in moist situations.

165. **A. philoxeroides** (Mart.) Griseb. Alligator Weed

Native of S. America; probably Brazilian in origin. Introduced into India during recent years and has been collected from Ranchi Lake (Maheshwari 1964).

166. **Gomphrena celosioides** Mart. Gomphrena-Weed

Native of South America. Introduced into India recently (Srivastava 1964). Found in waste lands and along roadsides. Local name: *Garundiara*.

167. **G. globosa** L. Globe Amaranth; Bachelor's Button

Probably native of America, but was originally described from India. Cultivated and naturalized in tropical regions. Common in gardens and often found as an escape in waste lands.

54. POLYGONACEAE

168. **Antigonon leptopus** Hook. & Arn. Coral Creeper

Native of S. America. Commonly planted in gardens, along trellises, poles and pergolas.

55. ARISTOLOCHIACEAE

169. **Aristolochia elegans** Mast. Calico-Flower

Native of tropical America (Maheshwari 1963). It was introduced into India in the early part of 18th century. Grown as an ornamental climber in gardens and hedges.

56. PIPERACEAE

170. **Peperomia pellucida** (L.) H.B. & K. Shiny Peperomia

Native of Central America; introduced into India in the later part

of 19th century (Srivastava 1964). Bressers (1951) first reported it from Ranchi. Rarely found in waste lands; often grown in conservatories and ferneries.

57. PROTEACEAE

171. **Grevillea robusta** A. Cunn. ex R. Br. Silky-Oak; Silver Oak

Native of Queensland and New South Wales (Maheshwari 1963). It was introduced into Ceylon in 1856 (MacMillan 1952); occasionally planted in gardens, lawns and avenues. It has been recently introduced at the Indian Lac Research Institute, Namkum (Ranchi) as an ornamental tree.

58. EUPHORBIACEAE

172. **Acalypha wilkesiana** M.-A. Copper Leaf

Native of New Hebrides and the Viti Island. Often planted in parks and gardens as an ornamental shrub.

173. **Croton bonplandianum** Baill.

Native of South America. According to Ridley (1930), it was first introduced into Chittagong (East Pakistan) in 1897 with ballast of mud. Common as a weed along roadsides, railway lines and waste lands. Local name: *Puttri*; *Kutti*.

174. **Euphorbia geniculata** Orteg.

Native of tropical America. It was introduced into India before Hooker published the flora of British India. Found as a weed in gardens, nursery beds and waste lands.

175. **E. prostrata** Ait. Red Caustic Creeper

Native of tropical America; introduced into India early in the 19th century. It was first recorded in Bihar by Woodhouse (Srivastava 1964) from Sabour and later recorded by Bressers (1951) from Ranchi. Common as a weed in gardens and waste lands.

176. **E. pulcherrima** Willd. ex Klotz. Poinsettia; Christmas Flower
Syn. *Poinsettia pulcherrima* R. Grah.

Native of Central America. It is the Poinsettia of local gardens and florists. Commonly planted in gardens.

177. **Jatropha curcas** L. Physic Nut

Native of tropical America (Backer & Brink 1963). Dymock *et al.* (quoted in Mehra 1966) mentioned that it was introduced into India by the Portuguese. Commonly planted in gardens and hedges. Local name: *Totuka*.

178. **J. podagrica** Hook. Tartogo Nettlespurge

Native of Panama; introduced into India by the Portuguese. Planted in private gardens.

179. **Manihot esculenta** Crantz. Cassava; Tapioca-Plant; Manioc

Native of tropical America. It is said to have been introduced into India variously, viz. (i) by the Portuguese, (ii) by the Dutch from the East Indies into Ceylon and India, and (iii) through Spanish influence into the Philippines from where it appears to have passed into Burma, Assam, E. Bengal and other places (Mehra 1966). Cultivated for the starchy tubers which yield tapioca.

180. **Ricinus communis** L. Castor Bean

Its original home, according to De Candolle (1886), is in Abyssinia, Sennaar and Kordofan. Backer and Brink (1963) regard it as an ancient plant of cultivation, probably from Africa. It was introduced into India at an early time. Planted near villages and in gardens; often self-sown.

59. CASUARINACEAE

181. **Casuarina equisetifolia** J. R. & G. Forst. Horsetail-Tree; Australian Pine

Its chief centre of distribution is Australia, Malaysia and the Pacific Islands. It was introduced in 1798 in the Calcutta Botanic Garden (Santapau 1965). Cultivated in gardens for decorative purposes.

60. MUSACEAE

182. **Ravenala madagascariensis** Sonn. Travellers-Tree

Native of Madagascar. It was introduced into Ceylon about 1824 (MacMillan 1952). Planted in gardens.

61. CANNACEAE

183. **Canna flaccida** Salisb. Canna

Native of tropical America. Planted in beds as an ornamental shrub.

62. AMARYLLIDACEAE

184. **Amaryllis belladonna** L. Belladonna Lily

A tropical American species; introduced into India in 1808 and again in 1841, but has not flowered till 1845 (Voigt 1845). Occasionally grown in gardens.

185. **Haemanthus coccineus** L. Blood-Lily

Native of S. Africa. Introduced into India in March 1841, but did not flower till 1845 (Voigt 1845). Cultivated in gardens.

186. **Zephyranthes grandiflora** Lindl. Crocus

Native of Cuba, Jamaica and Mexico (Bailey 1949). Flowers rose-red or pink. Planted in pots, window gardens, etc.

63. IRIDACEAE

187. **Gladiolus gandavensis** Van Houtte. Breeders Gladiolus

Native of South Africa (Bailey 1949). This hybrid was raised by the nurseryman Van Houtte in 1841 (Fletcher 1969). Rare; cultivated in private gardens for its flowers.

64. PONTEDERIACEAE

188. **Eichhornia crassipes** Solms. Water Hyacinth; Terror of Bengal; Million Dollar Weed; Devil's Lilac; Morgan's Folly

Native of Brazil; introduced into the Old World about 1829. It was brought by a gardener in Dacca towards the end of the 19th century and has been carried all over India. Common in ponds, ditches and swamps.

65. COMMELINACEAE

189. **Rhoco spathacea** (Sw.) Stearn. Boat-Lily

Syn. *R. discolor* Hance.

Native of Central America (MacMillan 1952). Introduced into India in the 16th century. It is the so-called *Tradescantia* of gardeners and florists. Cultivated as a pot plant in green-houses and gardens.

190. **Zebrina pendula** Schnizl. Wandering Jew

Syn. *Tradescantia zebrina* Hort. ex Loud.

A native of Mexico (Bailey 1949). Cultivated for its foliage in hanging baskets, pots, tubs and beddings.

66. ARECACEAE (nom. alt.: Palmae)

191. **Livistona chinensis** R. Br. ex Martius. Tub Palm

Native of E. Asia and Malaysia. Introduced into India during 1795-1809. Commonly planted in private gardens as a tub-plant.

67. POACEAE (nom. alt.: Gramineae)

192. **Aristida adscencionis** L. Sexweeks Threawn

A native of North Africa. According to Ridley (1930), it was described by Plukenet in 1696 as a Madras plant and was introduced into India prior to this date. Common in waste lands.

193. **Brachiaria brizantha** (Hochst. ex A. Rich.) Stapf. Signal Grass;
St. Lucia Grass

Introduced into India in the early 19th century from tropical Africa as a fodder grass (Bor 1960). Cultivated in the premises of Agriculture College, Kanke near Ranchi.

194. **Chloris barbata** Sw.

Native of tropical America; introduced into India about 1897 or in the early part of the 19th century as a fodder grass. Cultivated at Kanke near Ranchi.

195. **C. gayana** Kunth. Rhodes Grass

It has been introduced into India from Africa in the early 19th century (Bor 1960). Commonly cultivated as a fodder grass.

196. **Cynodon plectostachyus** (K. Schum.) Pilger. Giant Star Grass

A native of Africa (Bor 1960); introduced into India as a fodder grass in the early 19th century. Cultivated in the Agricultural Farm, Kanke, near Ranchi.

197. **Eragrostis curvula** (Schrad.) Nees. Weeping Love Grass

Syn. *Poa curvula* Schrad.

Native of Africa; introduced early in the present century. Cultivated in Ranchi as a fodder grass.

198. **Melinis minutiflora** P. Beauv. Molasses Grass

A native of Africa (Bor 1960); introduced into India as a fodder grass about 1892. Cultivated in Kanke, near Ranchi.

199. **Panicum coloratum** L.

A tropical American species; introduced into India (Bor 1960). Frequently cultivated.

200. **P. maximum** Jacq. Guinea Grass

A native of tropical Africa but now introduced into several warm countries including India (Bor 1960). Cultivated at Agricultural Farm, Kanke as a fodder grass.

201. **Paspalum notatum** Fluegge. Bahia Grass

An American species; introduced into India quite recently (Bor 1960). A good soil binder; cultivated at Agricultural Farm, Kanke.

202. **P. plicatum** Michx. Brownseed Paspalum

Distributed in Georgia and Florida to Texas (U.S.A.), southwards through Brazil to Argentina and through West Indies (Bor 1960). Introduced into India quite early in this century. It has been found to be slow growing, susceptible to frost and seed setting is not satisfactory. Cultivated at Kanke.

203. **Pennisetum clandestinum** Hochst. ex Chiov. Kikuyu Grass

Native of tropical East Africa (Bor 1960); introduced into many

countries including India as a pasture grass and a soil binder. Cultivated at Kanke.

204. **P. purpureum** Schumach. Napier or Elephant Grass

A native of tropical Africa (Bor 1960); now introduced into many tropical countries including India. Commonly cultivated as a fodder grass.

205. **Phalaris tuberosa** L. Toowoomba, Canary Grass

Native of the Mediterranean region (Bor 1960); cultivated in Australia and India as a valuable pasture grass. Commonly cultivated in the area.

206. **Polygogon monspeliensis** (L.) Desf. Rabbitfoot Grass; Beard Grass

Widely distributed in Europe and temperate parts of Asia and Africa, and now introduced into many countries including India (Bor 1960). It is also found in cooler parts of northwest Himalaya and Ceylon. Commonly cultivated as a fodder grass.

207. **Setaria sphacelata** (Schumach.) Stapf

Native of tropical and South Africa (Bor 1960). Introduced into India recently as a fodder grass. Frequently cultivated at Kanke.

208. **Sorghum halepense** (L.) Pers. Johnson Grass

Snowden (quoted in Bor 1960) considers it as a native of tropical America. Introduced into India at an early time. Common as a weed and also used as a fodder.

209. **Urochloa mosambicensis** (Hack.) Dandy

A native of East Africa and Burma (Bor 1960). Introduced into India quite recently as a fodder grass. Cultivated in the plots of Agricultural College, Kanke.

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